ABSTRACT OF THE INVENTION

The present invention relates to a radiolabeled DNA carrier, a method of preparation thereof and the therapeutic uses of this substance to prevent uncontrolled cellular proliferation. The invention also relates to devices incorporating the above radiolabeled DNA carrier (such as an oligonucleotide) for the therapeutic treatment of uncontrolled cellular proliferation. More specifically, the present invention is concerned with the prevention of restenosis by intravascular delivery of radiolabeled DNA carrier at a dilatation site of an artery. This invention is also directed to a method of treatment of vascular proliferative diseases and/or other proliferative disorders such as cancer and related metastasis. More particularly, the invention relates to the preparation of DNA sequences carrying one or several radioisotopes, located within the DNA sequence, and which are able to prevent cell proliferation *in vitro* and, pursuant to local drug delivery and/or systemic drug delivery, are able to prevent cell proliferation *in vivo*, more particularly restenosis and malignant tumors. In other words, the invention relates to the synthesis process, the stability data of the radiolabeled DNA carrier, the efficacy of the invention *in vitro*, in cell culture, and the *in vivo* delivery of the molecule.